

ABSTRACT OF THE DISCLOSURE

- 1 A matrix of AND-gates correspond to respective codes to be assigned to strings. The outputs of the AND-gates are selectively coupled to prefix code inputs of the AND-gates through a prefix code matrix switch.
- 5 A plurality of characters from the input stream are fetched into an input character buffer and applied through respective character decoders and selectively through a character matrix switch to character inputs of the AND-gates. An AND-gate corresponding to a code assigned
- 10 to a string that is the longest match to the plurality of fetched characters is thereby enabled. Update extended strings are recorded in the AND-gates, an extended string comprising a longest matching string extended by the data character following the longest matching string.
- 15 A virtual level is assigned to an AND-gate indicative of the number of characters of the string recorded thereby, the virtual level being one greater than the level that had been assigned to the AND-gate corresponding to the longest match. The virtual level is also
- 20 indicative of the stage of the input character buffer holding the character following the longest match. An AND-gate is reassigned to an extended string to be recorded when further codes are unavailable for assignment and the output of the AND-gate is not coupled to the
- 25 prefix code input of another AND-gate.